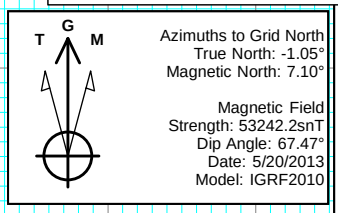
WHITING PETROLEUM CORPORATION

Project: Weld County, CO
Site: S21-T10N-R58W
Well: Razor #21C-2806B
Wellbore: HZ
Design: Plan #1

CATHEDRAL

SECTION DETAILS

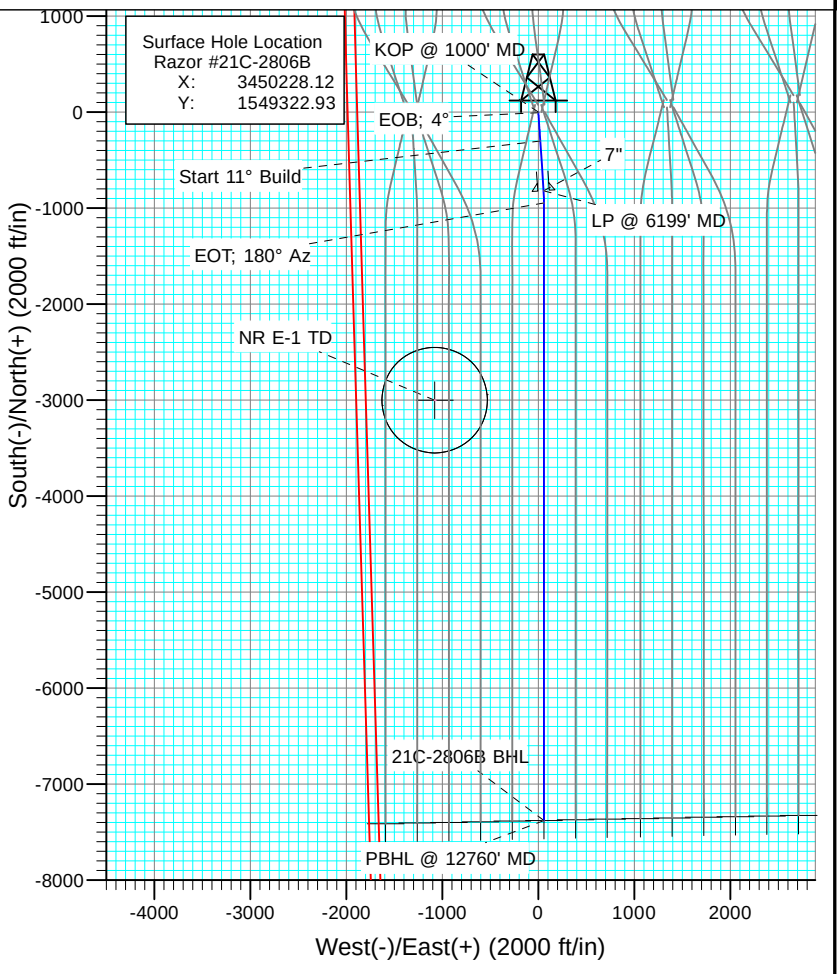
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0		KOP @ 1000' MD
3	1200.0	4.00	176.15	1199.8	-7.0	0.5	2.00	176.15	7.0		EOB; 4°
4	5417.9	4.00	176.15	5407.5	-300.5	20.2	0.00	0.00	300.7		Start 11° Build
5	6199.7	90.00	176.15	5892.0	-819.0	55.1	11.00	0.00	819.4		LP @ 6199' MD
6	6328.1	90.00	180.00	5892.0	-947.3	59.4	3.00	90.00	947.7		EOT; 180° Az
7	12760.0	90.00	180.00	5892.0	-7379.1	59.2	0.00	0.00	7379.4	21C-2806B BHL	PBHL @ 12760' MD



Azimuths to Grid North
True North: -1.05°
Magnetic North: 7.10°

Magnetic Field
Strength: 53242.2snT
Dip Angle: 67.47°
Date: 5/20/2013
Model: IGRF2010

Surface Hole Location
Razor #21C-2806B
X: 3450228.12
Y: 1549322.93



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
21C-2806B BHL	5892.0	-7379.1	59.2	1541943.80	3450287.30

Plan #1
Razor #21C-2806B
WELL @ 4860.5ft (Original Well Elev)
Ground Elevation @ 4844.0
North American Datum 1983
Well Razor #21C-2806B, Grid North

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #21C-2806B
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Site:	S21-T10N-R58W	**North Reference:**	Grid
Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Project Weld County, CO

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site S21-T10N-R58W

Site Position:		**Northing:**	1,549,497.72 ft	**Latitude:**	40° 49' 48.98 N
From:	Lat/Long	**Easting:**	3,452,853.58 ft	**Longitude:**	103° 51' 48.82 W
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	1.06 °

Well Razor #21C-2806B

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,549,322.93 ft	**Latitude:**	40° 49' 47.73 N
	+E/-W	0.0 ft	**Easting:**	3,450,228.12 ft	**Longitude:**	103° 52' 23.01 W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,844.0 ft

Wellbore HZ

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/20/2013	8.15	67.47	53,242

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	179.54

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,200.0	4.00	176.15	1,199.8	-7.0	0.5	2.00	2.00	0.00	176.15	
5,417.9	4.00	176.15	5,407.5	-300.5	20.2	0.00	0.00	0.00	0.00	
6,199.7	90.00	176.15	5,892.0	-819.0	55.1	11.00	11.00	0.00	0.00	
6,328.1	90.00	180.00	5,892.0	-947.3	59.4	3.00	0.00	3.00	90.00	
12,760.0	90.00	180.00	5,892.0	-7,379.1	59.2	0.00	0.00	0.00	0.00	21C-2806B BHL

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #21C-2806B
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Site:	S21-T10N-R58W	**North Reference:**	Grid
Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	KOP @ 1000' MD
1,100.0	2.00	176.15	1,100.0	-1.7	0.1	1.7	2.00	2.00	
1,200.0	4.00	176.15	1,199.8	-7.0	0.5	7.0	2.00	2.00	EOB; 4°
1,300.0	4.00	176.15	1,299.6	-13.9	0.9	13.9	0.00	0.00	
1,400.0	4.00	176.15	1,399.4	-20.9	1.4	20.9	0.00	0.00	
1,500.0	4.00	176.15	1,499.1	-27.8	1.9	27.9	0.00	0.00	
1,600.0	4.00	176.15	1,598.9	-34.8	2.3	34.8	0.00	0.00	
1,700.0	4.00	176.15	1,698.6	-41.8	2.8	41.8	0.00	0.00	
1,800.0	4.00	176.15	1,798.4	-48.7	3.3	48.7	0.00	0.00	
1,900.0	4.00	176.15	1,898.1	-55.7	3.7	55.7	0.00	0.00	
2,000.0	4.00	176.15	1,997.9	-62.6	4.2	62.7	0.00	0.00	
2,100.0	4.00	176.15	2,097.6	-69.6	4.7	69.6	0.00	0.00	
2,200.0	4.00	176.15	2,197.4	-76.6	5.2	76.6	0.00	0.00	
2,300.0	4.00	176.15	2,297.2	-83.5	5.6	83.6	0.00	0.00	
2,400.0	4.00	176.15	2,396.9	-90.5	6.1	90.5	0.00	0.00	
2,500.0	4.00	176.15	2,496.7	-97.4	6.6	97.5	0.00	0.00	
2,600.0	4.00	176.15	2,596.4	-104.4	7.0	104.5	0.00	0.00	
2,700.0	4.00	176.15	2,696.2	-111.4	7.5	111.4	0.00	0.00	
2,800.0	4.00	176.15	2,795.9	-118.3	8.0	118.4	0.00	0.00	
2,900.0	4.00	176.15	2,895.7	-125.3	8.4	125.3	0.00	0.00	
3,000.0	4.00	176.15	2,995.5	-132.2	8.9	132.3	0.00	0.00	
3,100.0	4.00	176.15	3,095.2	-139.2	9.4	139.3	0.00	0.00	
3,200.0	4.00	176.15	3,195.0	-146.2	9.8	146.2	0.00	0.00	
3,300.0	4.00	176.15	3,294.7	-153.1	10.3	153.2	0.00	0.00	
3,400.0	4.00	176.15	3,394.5	-160.1	10.8	160.2	0.00	0.00	
3,500.0	4.00	176.15	3,494.2	-167.0	11.2	167.1	0.00	0.00	
3,600.0	4.00	176.15	3,594.0	-174.0	11.7	174.1	0.00	0.00	
3,700.0	4.00	176.15	3,693.7	-181.0	12.2	181.1	0.00	0.00	
3,800.0	4.00	176.15	3,793.5	-187.9	12.6	188.0	0.00	0.00	
3,900.0	4.00	176.15	3,893.3	-194.9	13.1	195.0	0.00	0.00	
4,000.0	4.00	176.15	3,993.0	-201.8	13.6	201.9	0.00	0.00	
4,100.0	4.00	176.15	4,092.8	-208.8	14.1	208.9	0.00	0.00	
4,200.0	4.00	176.15	4,192.5	-215.8	14.5	215.9	0.00	0.00	
4,300.0	4.00	176.15	4,292.3	-222.7	15.0	222.8	0.00	0.00	
4,400.0	4.00	176.15	4,392.0	-229.7	15.5	229.8	0.00	0.00	
4,500.0	4.00	176.15	4,491.8	-236.6	15.9	236.8	0.00	0.00	
4,600.0	4.00	176.15	4,591.6	-243.6	16.4	243.7	0.00	0.00	
4,700.0	4.00	176.15	4,691.3	-250.6	16.9	250.7	0.00	0.00	
4,800.0	4.00	176.15	4,791.1	-257.5	17.3	257.7	0.00	0.00	
4,900.0	4.00	176.15	4,890.8	-264.5	17.8	264.6	0.00	0.00	
5,000.0	4.00	176.15	4,990.6	-271.4	18.3	271.6	0.00	0.00	
5,100.0	4.00	176.15	5,090.3	-278.4	18.7	278.5	0.00	0.00	

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Site:	S21-T10N-R58W	**North Reference:**	Grid
Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
5,200.0	4.00	176.15	5,190.1	-285.4	19.2	285.5	0.00	0.00	
5,300.0	4.00	176.15	5,289.9	-292.3	19.7	292.5	0.00	0.00	
5,400.0	4.00	176.15	5,389.6	-299.3	20.1	299.4	0.00	0.00	
5,417.9	4.00	176.15	5,407.5	-300.5	20.2	300.7	0.00	0.00	Start 11° Build
5,450.0	7.53	176.15	5,439.4	-303.7	20.4	303.9	11.00	11.00	
5,500.0	13.03	176.15	5,488.6	-312.6	21.0	312.8	11.00	11.00	
5,550.0	18.53	176.15	5,536.7	-326.2	22.0	326.4	11.00	11.00	
5,600.0	24.03	176.15	5,583.2	-344.3	23.2	344.5	11.00	11.00	
5,650.0	29.53	176.15	5,627.9	-366.8	24.7	367.0	11.00	11.00	
5,700.0	35.03	176.15	5,670.1	-393.4	26.5	393.6	11.00	11.00	
5,750.0	40.53	176.15	5,709.6	-424.0	28.5	424.2	11.00	11.00	
5,800.0	46.03	176.15	5,746.0	-458.1	30.8	458.4	11.00	11.00	
5,807.2	46.83	176.15	5,751.0	-463.4	31.2	463.6	11.00	11.00	Top Niobrara
5,850.0	51.53	176.15	5,778.9	-495.7	33.4	495.9	11.00	11.00	
5,900.0	57.03	176.15	5,808.1	-536.1	36.1	536.4	11.00	11.00	
5,950.0	62.53	176.15	5,833.3	-579.2	39.0	579.5	11.00	11.00	
6,000.0	68.03	176.15	5,854.2	-624.5	42.0	624.9	11.00	11.00	
6,050.0	73.53	176.15	5,870.6	-671.6	45.2	672.0	11.00	11.00	
6,100.0	79.03	176.15	5,882.5	-720.1	48.5	720.4	11.00	11.00	
6,150.0	84.53	176.15	5,889.6	-769.4	51.8	769.8	11.00	11.00	
6,199.7	90.00	176.15	5,892.0	-818.9	55.1	819.4	11.00	11.00	LP @ 6199' MD - 7"
6,300.0	90.00	179.16	5,892.0	-919.1	59.2	919.6	3.00	0.00	
6,328.1	90.00	180.00	5,892.0	-947.3	59.4	947.7	3.00	0.00	EOT; 180° Az
6,400.0	90.00	180.00	5,892.0	-1,019.1	59.4	1,019.6	0.00	0.00	
6,500.0	90.00	180.00	5,892.0	-1,119.1	59.4	1,119.6	0.00	0.00	
6,600.0	90.00	180.00	5,892.0	-1,219.1	59.4	1,219.6	0.00	0.00	
6,700.0	90.00	180.00	5,892.0	-1,319.1	59.4	1,319.6	0.00	0.00	
6,800.0	90.00	180.00	5,892.0	-1,419.1	59.4	1,419.6	0.00	0.00	
6,900.0	90.00	180.00	5,892.0	-1,519.1	59.4	1,519.6	0.00	0.00	
7,000.0	90.00	180.00	5,892.0	-1,619.1	59.4	1,619.6	0.00	0.00	
7,100.0	90.00	180.00	5,892.0	-1,719.1	59.4	1,719.6	0.00	0.00	
7,200.0	90.00	180.00	5,892.0	-1,819.1	59.4	1,819.6	0.00	0.00	
7,300.0	90.00	180.00	5,892.0	-1,919.1	59.4	1,919.6	0.00	0.00	
7,400.0	90.00	180.00	5,892.0	-2,019.1	59.4	2,019.6	0.00	0.00	
7,500.0	90.00	180.00	5,892.0	-2,119.1	59.4	2,119.5	0.00	0.00	
7,600.0	90.00	180.00	5,892.0	-2,219.1	59.4	2,219.5	0.00	0.00	
7,700.0	90.00	180.00	5,892.0	-2,319.1	59.4	2,319.5	0.00	0.00	
7,800.0	90.00	180.00	5,892.0	-2,419.1	59.4	2,419.5	0.00	0.00	
7,900.0	90.00	180.00	5,892.0	-2,519.1	59.4	2,519.5	0.00	0.00	
8,000.0	90.00	180.00	5,892.0	-2,619.1	59.4	2,619.5	0.00	0.00	
8,100.0	90.00	180.00	5,892.0	-2,719.1	59.4	2,719.5	0.00	0.00	
8,200.0	90.00	180.00	5,892.0	-2,819.1	59.4	2,819.5	0.00	0.00	
8,300.0	90.00	180.00	5,892.0	-2,919.1	59.3	2,919.5	0.00	0.00	
8,400.0	90.00	180.00	5,892.0	-3,019.1	59.3	3,019.5	0.00	0.00	
8,500.0	90.00	180.00	5,892.0	-3,119.1	59.3	3,119.5	0.00	0.00	
8,600.0	90.00	180.00	5,892.0	-3,219.1	59.3	3,219.5	0.00	0.00	
8,700.0	90.00	180.00	5,892.0	-3,319.1	59.3	3,319.5	0.00	0.00	
8,800.0	90.00	180.00	5,892.0	-3,419.1	59.3	3,419.5	0.00	0.00	
8,900.0	90.00	180.00	5,892.0	-3,519.1	59.3	3,519.5	0.00	0.00	
9,000.0	90.00	180.00	5,892.0	-3,619.1	59.3	3,619.5	0.00	0.00	
9,100.0	90.00	180.00	5,892.0	-3,719.1	59.3	3,719.5	0.00	0.00	
9,200.0	90.00	180.00	5,892.0	-3,819.1	59.3	3,819.5	0.00	0.00	

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Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,300.0	90.00	180.00	5,892.0	-3,919.1	59.3	3,919.5	0.00	0.00	
9,400.0	90.00	180.00	5,892.0	-4,019.1	59.3	4,019.5	0.00	0.00	
9,500.0	90.00	180.00	5,892.0	-4,119.1	59.3	4,119.5	0.00	0.00	
9,600.0	90.00	180.00	5,892.0	-4,219.1	59.3	4,219.5	0.00	0.00	
9,700.0	90.00	180.00	5,892.0	-4,319.1	59.3	4,319.5	0.00	0.00	
9,800.0	90.00	180.00	5,892.0	-4,419.1	59.3	4,419.5	0.00	0.00	
9,900.0	90.00	180.00	5,892.0	-4,519.1	59.3	4,519.5	0.00	0.00	
10,000.0	90.00	180.00	5,892.0	-4,619.1	59.3	4,619.5	0.00	0.00	
10,100.0	90.00	180.00	5,892.0	-4,719.1	59.3	4,719.5	0.00	0.00	
10,200.0	90.00	180.00	5,892.0	-4,819.1	59.3	4,819.5	0.00	0.00	
10,300.0	90.00	180.00	5,892.0	-4,919.1	59.3	4,919.5	0.00	0.00	
10,400.0	90.00	180.00	5,892.0	-5,019.1	59.3	5,019.5	0.00	0.00	
10,500.0	90.00	180.00	5,892.0	-5,119.1	59.3	5,119.4	0.00	0.00	
10,600.0	90.00	180.00	5,892.0	-5,219.1	59.3	5,219.4	0.00	0.00	
10,700.0	90.00	180.00	5,892.0	-5,319.1	59.3	5,319.4	0.00	0.00	
10,800.0	90.00	180.00	5,892.0	-5,419.1	59.3	5,419.4	0.00	0.00	
10,900.0	90.00	180.00	5,892.0	-5,519.1	59.2	5,519.4	0.00	0.00	
11,000.0	90.00	180.00	5,892.0	-5,619.1	59.2	5,619.4	0.00	0.00	
11,100.0	90.00	180.00	5,892.0	-5,719.1	59.2	5,719.4	0.00	0.00	
11,200.0	90.00	180.00	5,892.0	-5,819.1	59.2	5,819.4	0.00	0.00	
11,300.0	90.00	180.00	5,892.0	-5,919.1	59.2	5,919.4	0.00	0.00	
11,400.0	90.00	180.00	5,892.0	-6,019.1	59.2	6,019.4	0.00	0.00	
11,500.0	90.00	180.00	5,892.0	-6,119.1	59.2	6,119.4	0.00	0.00	
11,600.0	90.00	180.00	5,892.0	-6,219.1	59.2	6,219.4	0.00	0.00	
11,700.0	90.00	180.00	5,892.0	-6,319.1	59.2	6,319.4	0.00	0.00	
11,800.0	90.00	180.00	5,892.0	-6,419.1	59.2	6,419.4	0.00	0.00	
11,900.0	90.00	180.00	5,892.0	-6,519.1	59.2	6,519.4	0.00	0.00	
12,000.0	90.00	180.00	5,892.0	-6,619.1	59.2	6,619.4	0.00	0.00	
12,100.0	90.00	180.00	5,892.0	-6,719.1	59.2	6,719.4	0.00	0.00	
12,200.0	90.00	180.00	5,892.0	-6,819.1	59.2	6,819.4	0.00	0.00	
12,300.0	90.00	180.00	5,892.0	-6,919.1	59.2	6,919.4	0.00	0.00	
12,400.0	90.00	180.00	5,892.0	-7,019.1	59.2	7,019.4	0.00	0.00	
12,500.0	90.00	180.00	5,892.0	-7,119.1	59.2	7,119.4	0.00	0.00	
12,600.0	90.00	180.00	5,892.0	-7,219.1	59.2	7,219.4	0.00	0.00	
12,700.0	90.00	180.00	5,892.0	-7,319.1	59.2	7,319.4	0.00	0.00	
12,760.0	90.00	180.00	5,892.0	-7,379.1	59.2	7,379.4	0.00	0.00	PBHL @ 12760' MD

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
21C-2806B BHL - plan hits target center - Point	0.00	0.00	5,892.0	-7,379.1	59.2	1,541,943.80	3,450,287.30	40° 48' 34.82 N	103° 52' 24.00 W

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #21C-2806B
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Site:	S21-T10N-R58W	**North Reference:**	Grid
Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
6,199.7	5,892.0	7"	0.000	0.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,807.2	5,751.0	Top Niobrara		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,000.0	1,000.0	0.0	0.0	KOP @ 1000' MD
1,200.0	1,199.8	-7.0	0.5	EOB; 4°
5,417.9	5,407.5	-300.5	20.2	Start 11° Build
6,199.7	5,892.0	-819.0	55.1	LP @ 6199' MD
6,328.1	5,892.0	-947.3	59.4	EOT; 180° Az
12,760.0	5,892.0	-7,379.1	59.2	PBHL @ 12760' MD

Whiting Petroleum Corporation

Weld County, CO
S21-T10N-R58W
Razor #21C-2806B
HZ
Plan #1

Anticollision Report

28 May, 2013

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21C-2806B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference	Plan #1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	**Error Model:**	Systematic Ellipse
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 500.0ft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

Survey Tool Program **Date** 5/28/2013

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	12,760.0	Plan #1 (HZ)	ISCWSA MWD	MWD - ISCWSA

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21C-2806B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
S21-T10N-R58W						
Fregeau 1 (Existing) - Existing - ASSUMED VERTICAL						Out of range
Fregeau 2 (Existing) - Existing - ASSUMED VERTICAL						Out of range
Nelson Ranches E-1 (Existing) - Existing - ASSUMED VE						Out of range
Razor #21A-0913A - HZ - Plan #1						Out of range
Razor #21A-0914B - HZ - Plan #1						Out of range
Razor #21A-0915A - HZ - Plan #1						Out of range
Razor #21A-0916B - HZ - Plan #1						Out of range
Razor #21A-2813A - HZ - Plan #1						Out of range
Razor #21A-2814B - HZ - Plan #1						Out of range
Razor #21A-2815A - HZ - Plan #1						Out of range
Razor #21A-2816B - HZ - Plan #1						Out of range
Razor #21B-0909A - HZ - Plan #1						Out of range
Razor #21B-0910B - HZ - Plan #1						Out of range
Razor #21B-0911A - HZ - Plan #1						Out of range
Razor #21B-0912B - HZ - Plan #1						Out of range
Razor #21B-2809A - HZ - Plan #1						Out of range
Razor #21B-2810B - HZ - Plan #1						Out of range
Razor #21B-2811A - HZ - Plan #1						Out of range
Razor #21B-2812B - HZ - Plan #1						Out of range
Razor #21C-0905A - HZ - Plan #1	500.0	500.0	75.1	73.1	37.797	CC, ES
Razor #21C-0905A - HZ - Plan #1	1,100.0	1,094.1	108.2	103.5	23.206	SF
Razor #21C-0906B - HZ - Plan #1	700.0	700.0	33.2	30.3	11.512	CC, ES
Razor #21C-0906B - HZ - Plan #1	1,000.0	998.7	39.6	35.4	9.353	SF
Razor #21C-0907A - HZ - Plan #1	900.0	900.0	99.5	95.7	26.289	CC, ES
Razor #21C-0907A - HZ - Plan #1	1,100.0	1,095.0	105.5	100.9	22.705	SF
Razor #21C-0908B - HZ - Plan #1	1,094.9	1,094.9	32.1	27.4	6.922	CC
Razor #21C-0908B - HZ - Plan #1	1,100.0	1,100.0	32.1	27.4	6.890	ES
Razor #21C-0908B - HZ - Plan #1	1,200.0	1,199.3	33.3	28.3	6.597	SF
Razor #21C-2805A - HZ - Plan #1	1,000.0	1,000.0	82.1	77.9	19.390	CC
Razor #21C-2805A - HZ - Plan #1	12,760.0	12,793.7	341.2	64.2	1.232	Level 2, ES, SF
Razor #21C-2807A - HZ - Plan #1	1,138.9	1,142.1	60.3	55.5	12.671	CC, ES
Razor #21C-2807A - HZ - Plan #1	12,760.0	12,766.2	339.8	62.1	1.223	Level 2, SF
Razor #21C-2808B - HZ - Plan #1	800.0	800.0	65.3	62.0	19.587	CC, ES
Razor #21C-2808B - HZ - Plan #1	5,400.0	5,395.3	200.5	174.5	7.715	SF
Razor #21D-0901A - HZ - Plan #1						Out of range
Razor #21D-0902B - HZ - Plan #1						Out of range
Razor #21D-0903A - HZ - Plan #1						Out of range
Razor #21D-0904B - HZ - Plan #1						Out of range
Razor #21D-2801A - HZ - Plan #1						Out of range
Razor #21D-2802B - HZ - Plan #1						Out of range
Razor #21D-2803A - HZ - Plan #1						Out of range
Razor #21D-2804B - HZ - Plan #1						Out of range

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21C-2806B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0905A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-1.05	75.0	-1.4	75.1				
100.0	100.0	100.0	100.0	0.1	0.1	-1.05	75.0	-1.4	75.1	74.9	0.19	399.928	
200.0	200.0	200.0	200.0	0.3	0.3	-1.05	75.0	-1.4	75.1	74.4	0.64	117.792	
300.0	300.0	300.0	300.0	0.5	0.5	-1.05	75.0	-1.4	75.1	74.0	1.09	69.067	
400.0	400.0	400.0	400.0	0.8	0.8	-1.05	75.0	-1.4	75.1	73.5	1.54	48.857	
500.0	500.0	500.0	500.0	1.0	1.0	-1.05	75.0	-1.4	75.1	73.1	1.99	37.797	CC, ES
600.0	600.0	597.8	597.7	1.2	1.2	-1.68	76.5	-2.2	76.5	74.1	2.43	31.499	
700.0	700.0	695.3	695.1	1.4	1.4	-3.43	80.7	-4.8	81.0	78.1	2.88	28.151	
800.0	800.0	794.9	794.5	1.7	1.7	-5.57	86.7	-8.5	87.2	83.9	3.33	26.178	
900.0	900.0	894.7	894.0	1.9	1.9	-7.43	92.6	-12.1	93.6	89.8	3.79	24.712	
1,000.0	1,000.0	994.4	993.5	2.1	2.1	-9.06	98.5	-15.7	100.0	95.7	4.24	23.575	
1,100.0	1,100.0	1,094.1	1,092.9	2.3	2.4	173.46	104.5	-19.3	108.2	103.5	4.66	23.206	SF
1,200.0	1,199.8	1,193.3	1,192.0	2.5	2.6	172.52	110.4	-22.9	119.9	114.9	5.06	23.685	
1,300.0	1,299.6	1,292.4	1,290.8	2.7	2.9	171.88	116.3	-26.5	133.4	127.9	5.47	24.374	
1,400.0	1,399.4	1,391.5	1,389.7	2.9	3.1	171.36	122.2	-30.1	146.8	140.9	5.89	24.939	
1,500.0	1,499.1	1,490.6	1,488.5	3.1	3.4	170.93	128.1	-33.7	160.3	154.0	6.31	25.405	
1,600.0	1,598.9	1,589.7	1,587.3	3.3	3.6	170.56	134.0	-37.3	173.8	167.0	6.74	25.795	
1,700.0	1,698.6	1,688.8	1,686.2	3.5	3.9	170.24	139.9	-40.9	187.3	180.1	7.17	26.125	
1,800.0	1,798.4	1,787.8	1,785.0	3.8	4.1	169.97	145.8	-44.5	200.7	193.1	7.60	26.406	
1,900.0	1,898.1	1,886.9	1,883.9	4.0	4.4	169.73	151.7	-48.1	214.2	206.2	8.04	26.647	
2,000.0	1,997.9	1,986.0	1,982.7	4.2	4.6	169.52	157.6	-51.7	227.7	219.3	8.48	26.855	
2,100.0	2,097.6	2,085.1	2,081.5	4.5	4.9	169.34	163.5	-55.3	241.2	232.3	8.92	27.037	
2,200.0	2,197.4	2,184.2	2,180.4	4.7	5.2	169.17	169.4	-58.9	254.7	245.4	9.37	27.197	
2,300.0	2,297.2	2,283.2	2,279.2	5.0	5.4	169.02	175.3	-62.5	268.2	258.4	9.81	27.338	
2,400.0	2,396.9	2,382.3	2,378.1	5.2	5.7	168.89	181.2	-66.1	281.7	271.5	10.26	27.464	
2,500.0	2,496.7	2,481.4	2,476.9	5.5	5.9	168.76	187.1	-69.7	295.2	284.5	10.71	27.575	
2,600.0	2,596.4	2,580.5	2,575.7	5.7	6.2	168.65	193.0	-73.3	308.7	297.6	11.16	27.676	
2,700.0	2,696.2	2,679.6	2,674.6	6.0	6.4	168.55	198.9	-76.9	322.3	310.7	11.61	27.766	
2,800.0	2,795.9	2,778.7	2,773.4	6.2	6.7	168.46	204.8	-80.5	335.8	323.7	12.06	27.848	
2,900.0	2,895.7	2,877.7	2,872.3	6.5	6.9	168.37	210.7	-84.1	349.3	336.8	12.51	27.923	
3,000.0	2,995.5	2,976.8	2,971.1	6.7	7.2	168.29	216.6	-87.7	362.8	349.8	12.96	27.991	
3,100.0	3,095.2	3,075.9	3,070.0	7.0	7.4	168.21	222.5	-91.3	376.3	362.9	13.41	28.053	
3,200.0	3,195.0	3,175.0	3,168.8	7.2	7.7	168.14	228.4	-94.9	389.8	375.9	13.87	28.110	
3,300.0	3,294.7	3,274.1	3,267.6	7.5	8.0	168.08	234.3	-98.5	403.3	389.0	14.32	28.162	
3,400.0	3,394.5	3,373.1	3,366.5	7.8	8.2	168.02	240.2	-102.1	416.8	402.1	14.78	28.211	
3,500.0	3,494.2	3,472.2	3,465.3	8.0	8.5	167.96	246.1	-105.7	430.3	415.1	15.23	28.256	
3,600.0	3,594.0	3,571.3	3,564.2	8.3	8.7	167.91	252.0	-109.3	443.9	428.2	15.69	28.297	
3,700.0	3,693.7	3,670.4	3,663.0	8.5	9.0	167.86	257.9	-112.9	457.4	441.2	16.14	28.336	
3,800.0	3,793.5	3,769.5	3,761.8	8.8	9.2	167.81	263.8	-116.5	470.9	454.3	16.60	28.372	
3,900.0	3,893.3	3,868.6	3,860.7	9.0	9.5	167.76	269.7	-120.1	484.4	467.3	17.05	28.406	
4,000.0	3,993.0	3,967.6	3,959.5	9.3	9.7	167.72	275.6	-123.7	497.9	480.4	17.51	28.437	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21C-2806B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0906B - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-91.02	-0.6	-33.2	33.2				
100.0	100.0	100.0	100.0	0.1	0.1	-91.02	-0.6	-33.2	33.2	33.0	0.19	176.947	
200.0	200.0	200.0	200.0	0.3	0.3	-91.02	-0.6	-33.2	33.2	32.6	0.64	52.117	
300.0	300.0	300.0	300.0	0.5	0.5	-91.02	-0.6	-33.2	33.2	32.1	1.09	30.559	
400.0	400.0	400.0	400.0	0.8	0.8	-91.02	-0.6	-33.2	33.2	31.7	1.54	21.617	
500.0	500.0	500.0	500.0	1.0	1.0	-91.02	-0.6	-33.2	33.2	31.2	1.99	16.723	
600.0	600.0	600.0	600.0	1.2	1.2	-91.02	-0.6	-33.2	33.2	30.8	2.44	13.636	
700.0	700.0	700.0	700.0	1.4	1.4	-91.02	-0.6	-33.2	33.2	30.3	2.88	11.512	CC, ES
800.0	800.0	799.6	799.6	1.7	1.7	-88.22	1.1	-33.7	33.8	30.4	3.33	10.132	
900.0	900.0	899.0	898.8	1.9	1.9	-80.42	6.0	-35.4	35.9	32.1	3.78	9.489	
1,000.0	1,000.0	998.7	998.3	2.1	2.1	-71.48	12.6	-37.5	39.6	35.4	4.24	9.353	SF
1,100.0	1,100.0	1,098.4	1,097.7	2.3	2.4	121.45	19.2	-39.7	45.1	40.4	4.66	9.671	
1,200.0	1,199.8	1,197.6	1,196.7	2.5	2.6	131.28	25.8	-41.9	53.6	48.6	5.06	10.596	
1,300.0	1,299.6	1,296.7	1,295.5	2.7	2.8	139.40	32.3	-44.1	64.6	59.2	5.47	11.822	
1,400.0	1,399.4	1,395.7	1,394.3	2.9	3.1	145.08	38.9	-46.2	76.6	70.7	5.88	13.017	
1,500.0	1,499.1	1,494.8	1,493.1	3.1	3.3	149.21	45.4	-48.4	89.1	82.8	6.30	14.129	
1,600.0	1,598.9	1,593.8	1,591.9	3.3	3.6	152.31	52.0	-50.5	101.9	95.1	6.73	15.142	
1,700.0	1,698.6	1,692.8	1,690.7	3.5	3.8	154.72	58.6	-52.7	114.9	107.8	7.16	16.058	
1,800.0	1,798.4	1,791.9	1,789.5	3.8	4.1	156.63	65.1	-54.9	128.1	120.5	7.59	16.885	
1,900.0	1,898.1	1,890.9	1,888.3	4.0	4.3	158.19	71.7	-57.0	141.5	133.4	8.02	17.630	
2,000.0	1,997.9	1,990.0	1,987.1	4.2	4.6	159.47	78.2	-59.2	154.9	146.4	8.46	18.304	
2,100.0	2,097.6	2,089.0	2,085.9	4.5	4.8	160.55	84.8	-61.4	168.3	159.4	8.90	18.914	
2,200.0	2,197.4	2,188.0	2,184.7	4.7	5.1	161.48	91.4	-63.5	181.9	172.5	9.34	19.469	
2,300.0	2,297.2	2,287.1	2,283.5	5.0	5.3	162.27	97.9	-65.7	195.4	185.6	9.78	19.975	
2,400.0	2,396.9	2,386.1	2,382.3	5.2	5.6	162.96	104.5	-67.9	209.0	198.8	10.23	20.437	
2,500.0	2,496.7	2,485.2	2,481.1	5.5	5.8	163.57	111.0	-70.0	222.6	212.0	10.67	20.862	
2,600.0	2,596.4	2,584.2	2,579.9	5.7	6.1	164.10	117.6	-72.2	236.3	225.2	11.12	21.252	
2,700.0	2,696.2	2,683.3	2,678.7	6.0	6.3	164.58	124.2	-74.3	250.0	238.4	11.57	21.612	
2,800.0	2,795.9	2,782.3	2,777.6	6.2	6.6	165.01	130.7	-76.5	263.6	251.6	12.01	21.945	
2,900.0	2,895.7	2,881.3	2,876.4	6.5	6.8	165.39	137.3	-78.7	277.3	264.9	12.46	22.254	
3,000.0	2,995.5	2,980.4	2,975.2	6.7	7.1	165.74	143.9	-80.8	291.0	278.1	12.91	22.541	
3,100.0	3,095.2	3,079.4	3,074.0	7.0	7.3	166.06	150.4	-83.0	304.7	291.4	13.36	22.809	
3,200.0	3,195.0	3,178.5	3,172.8	7.2	7.6	166.35	157.0	-85.2	318.5	304.6	13.81	23.059	
3,300.0	3,294.7	3,277.5	3,271.6	7.5	7.8	166.62	163.5	-87.3	332.2	317.9	14.26	23.293	
3,400.0	3,394.5	3,376.6	3,370.4	7.8	8.1	166.86	170.1	-89.5	345.9	331.2	14.71	23.512	
3,500.0	3,494.2	3,475.6	3,469.2	8.0	8.3	167.09	176.7	-91.7	359.6	344.5	15.16	23.718	
3,600.0	3,594.0	3,574.6	3,568.0	8.3	8.6	167.30	183.2	-93.8	373.4	357.8	15.62	23.912	
3,700.0	3,693.7	3,673.7	3,666.8	8.5	8.9	167.50	189.8	-96.0	387.1	371.1	16.07	24.095	
3,800.0	3,793.5	3,772.7	3,765.6	8.8	9.1	167.68	196.3	-98.1	400.9	384.4	16.52	24.267	
3,900.0	3,893.3	3,871.8	3,864.4	9.0	9.4	167.85	202.9	-100.3	414.6	397.7	16.97	24.431	
4,000.0	3,993.0	3,970.8	3,963.2	9.3	9.6	168.01	209.5	-102.5	428.4	411.0	17.43	24.585	
4,100.0	4,092.8	4,069.8	4,062.0	9.6	9.9	168.16	216.0	-104.6	442.2	424.3	17.88	24.732	
4,200.0	4,192.5	4,168.9	4,160.8	9.8	10.1	168.30	222.6	-106.8	455.9	437.6	18.33	24.871	
4,300.0	4,292.3	4,267.9	4,259.6	10.1	10.4	168.43	229.2	-109.0	469.7	450.9	18.79	25.003	
4,400.0	4,392.0	4,367.0	4,358.4	10.3	10.6	168.55	235.7	-111.1	483.5	464.2	19.24	25.129	
4,500.0	4,491.8	4,466.0	4,457.2	10.6	10.9	168.67	242.3	-113.3	497.2	477.6	19.69	25.249	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21C-2806B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0907A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	39.99	76.2	63.9	99.5				
100.0	100.0	100.0	100.0	0.1	0.1	39.99	76.2	63.9	99.5	99.3	0.19	530.040	
200.0	200.0	200.0	200.0	0.3	0.3	39.99	76.2	63.9	99.5	98.8	0.64	156.114	
300.0	300.0	300.0	300.0	0.5	0.5	39.99	76.2	63.9	99.5	98.4	1.09	91.537	
400.0	400.0	400.0	400.0	0.8	0.8	39.99	76.2	63.9	99.5	97.9	1.54	64.753	
500.0	500.0	500.0	500.0	1.0	1.0	39.99	76.2	63.9	99.5	97.5	1.99	50.094	
600.0	600.0	600.0	600.0	1.2	1.2	39.99	76.2	63.9	99.5	97.0	2.44	40.848	
700.0	700.0	700.0	700.0	1.4	1.4	39.99	76.2	63.9	99.5	96.6	2.88	34.483	
800.0	800.0	800.0	800.0	1.7	1.7	39.99	76.2	63.9	99.5	96.1	3.33	29.834	
900.0	900.0	900.0	900.0	1.9	1.9	39.99	76.2	63.9	99.5	95.7	3.78	26.289	CC, ES
1,000.0	1,000.0	997.7	997.7	2.1	2.1	39.28	77.9	63.7	100.6	96.4	4.23	23.800	
1,100.0	1,100.0	1,095.0	1,094.8	2.3	2.3	-139.41	82.8	63.0	105.5	100.9	4.65	22.705	SF
1,200.0	1,199.8	1,194.1	1,193.7	2.5	2.6	-143.42	89.6	62.1	114.8	109.7	5.05	22.724	
1,300.0	1,299.6	1,293.1	1,292.5	2.7	2.8	-147.35	96.5	61.2	126.0	120.5	5.46	23.069	
1,400.0	1,399.4	1,392.2	1,391.3	2.9	3.0	-150.62	103.3	60.3	137.7	131.8	5.88	23.420	
1,500.0	1,499.1	1,491.2	1,490.1	3.1	3.3	-153.38	110.2	59.3	149.8	143.5	6.30	23.764	
1,600.0	1,598.9	1,590.2	1,588.9	3.3	3.5	-155.73	117.0	58.4	162.2	155.4	6.73	24.093	
1,700.0	1,698.6	1,689.3	1,687.7	3.5	3.7	-157.74	123.9	57.5	174.8	167.6	7.16	24.404	
1,800.0	1,798.4	1,788.3	1,786.4	3.8	4.0	-159.48	130.7	56.6	187.6	180.0	7.59	24.696	
1,900.0	1,898.1	1,887.3	1,885.2	4.0	4.2	-160.99	137.6	55.6	200.5	192.5	8.03	24.968	
2,000.0	1,997.9	1,986.3	1,984.0	4.2	4.5	-162.33	144.4	54.7	213.6	205.1	8.47	25.221	
2,100.0	2,097.6	2,085.4	2,082.8	4.5	4.7	-163.50	151.3	53.8	226.7	217.8	8.91	25.455	
2,200.0	2,197.4	2,184.4	2,181.6	4.7	5.0	-164.55	158.1	52.9	240.0	230.6	9.35	25.673	
2,300.0	2,297.2	2,283.4	2,280.4	5.0	5.2	-165.49	164.9	51.9	253.3	243.5	9.79	25.876	
2,400.0	2,396.9	2,382.4	2,379.2	5.2	5.5	-166.34	171.8	51.0	266.7	256.4	10.23	26.063	
2,500.0	2,496.7	2,481.5	2,477.9	5.5	5.7	-167.10	178.6	50.1	280.1	269.4	10.68	26.238	
2,600.0	2,596.4	2,580.5	2,576.7	5.7	6.0	-167.80	185.5	49.2	293.6	282.5	11.12	26.401	
2,700.0	2,696.2	2,679.5	2,675.5	6.0	6.2	-168.43	192.3	48.2	307.1	295.5	11.57	26.552	
2,800.0	2,795.9	2,778.6	2,774.3	6.2	6.5	-169.01	199.2	47.3	320.7	308.6	12.01	26.694	
2,900.0	2,895.7	2,877.6	2,873.1	6.5	6.7	-169.54	206.0	46.4	334.2	321.8	12.46	26.827	
3,000.0	2,995.5	2,976.6	2,971.9	6.7	7.0	-170.03	212.9	45.4	347.8	334.9	12.91	26.951	
3,100.0	3,095.2	3,075.6	3,070.7	7.0	7.2	-170.49	219.7	44.5	361.5	348.1	13.35	27.067	
3,200.0	3,195.0	3,174.7	3,169.5	7.2	7.5	-170.91	226.6	43.6	375.1	361.3	13.80	27.177	
3,300.0	3,294.7	3,273.7	3,268.2	7.5	7.7	-171.30	233.4	42.7	388.8	374.5	14.25	27.280	
3,400.0	3,394.5	3,372.7	3,367.0	7.8	8.0	-171.67	240.2	41.7	402.5	387.8	14.70	27.377	
3,500.0	3,494.2	3,471.8	3,465.8	8.0	8.2	-172.01	247.1	40.8	416.2	401.0	15.15	27.469	
3,600.0	3,594.0	3,570.8	3,564.6	8.3	8.5	-172.33	253.9	39.9	429.9	414.3	15.60	27.555	
3,700.0	3,693.7	3,669.8	3,663.4	8.5	8.7	-172.63	260.8	39.0	443.6	427.5	16.05	27.637	
3,800.0	3,793.5	3,768.8	3,762.2	8.8	9.0	-172.91	267.6	38.0	457.3	440.8	16.50	27.715	
3,900.0	3,893.3	3,867.9	3,861.0	9.0	9.2	-173.17	274.5	37.1	471.1	454.1	16.95	27.789	
4,000.0	3,993.0	3,966.9	3,959.7	9.3	9.5	-173.42	281.3	36.2	484.8	467.4	17.40	27.859	
4,100.0	4,092.8	4,065.9	4,058.5	9.6	9.7	-173.66	288.2	35.3	498.6	480.7	17.85	27.925	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21C-2806B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0908B - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	88.96	0.6	32.1	32.1				
100.0	100.0	100.0	100.0	0.1	0.1	88.96	0.6	32.1	32.1	31.9	0.19	171.049	
200.0	200.0	200.0	200.0	0.3	0.3	88.96	0.6	32.1	32.1	31.5	0.64	50.379	
300.0	300.0	300.0	300.0	0.5	0.5	88.96	0.6	32.1	32.1	31.0	1.09	29.540	
400.0	400.0	400.0	400.0	0.8	0.8	88.96	0.6	32.1	32.1	30.6	1.54	20.896	
500.0	500.0	500.0	500.0	1.0	1.0	88.96	0.6	32.1	32.1	30.1	1.99	16.166	
600.0	600.0	600.0	600.0	1.2	1.2	88.96	0.6	32.1	32.1	29.7	2.44	13.182	
700.0	700.0	700.0	700.0	1.4	1.4	88.96	0.6	32.1	32.1	29.2	2.88	11.128	
800.0	800.0	800.0	800.0	1.7	1.7	88.96	0.6	32.1	32.1	28.8	3.33	9.628	
900.0	900.0	900.0	900.0	1.9	1.9	88.96	0.6	32.1	32.1	28.3	3.78	8.484	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	88.96	0.6	32.1	32.1	27.9	4.23	7.583	
1,094.9	1,094.9	1,094.9	1,094.9	2.3	2.3	-90.00	0.6	32.1	32.1	27.4	4.63	6.922	CC
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	-90.31	0.6	32.1	32.1	27.4	4.65	6.890	ES
1,200.0	1,199.8	1,199.3	1,199.3	2.5	2.6	-102.13	2.3	32.5	33.3	28.3	5.05	6.597	SF
1,300.0	1,299.6	1,297.8	1,297.7	2.7	2.8	-118.81	7.2	33.6	39.0	33.5	5.46	7.140	
1,400.0	1,399.4	1,396.8	1,396.4	2.9	3.0	-131.77	14.0	35.2	48.6	42.8	5.88	8.267	
1,500.0	1,499.1	1,495.9	1,495.2	3.1	3.2	-140.19	20.7	36.8	59.9	53.6	6.31	9.501	
1,600.0	1,598.9	1,594.9	1,594.1	3.3	3.5	-145.88	27.4	38.3	72.0	65.3	6.73	10.706	
1,700.0	1,698.6	1,694.0	1,692.9	3.5	3.7	-149.91	34.1	39.9	84.7	77.5	7.16	11.832	
1,800.0	1,798.4	1,793.0	1,791.7	3.8	3.9	-152.88	40.9	41.5	97.6	90.0	7.59	12.866	
1,900.0	1,898.1	1,892.1	1,890.5	4.0	4.2	-155.15	47.6	43.0	110.8	102.8	8.02	13.809	
2,000.0	1,997.9	1,991.1	1,989.3	4.2	4.4	-156.94	54.3	44.6	124.1	115.6	8.46	14.668	
2,100.0	2,097.6	2,090.2	2,088.1	4.5	4.7	-158.38	61.1	46.2	137.4	128.5	8.90	15.450	
2,200.0	2,197.4	2,189.2	2,186.9	4.7	4.9	-159.57	67.8	47.7	150.9	141.5	9.33	16.163	
2,300.0	2,297.2	2,288.3	2,285.7	5.0	5.2	-160.56	74.5	49.3	164.4	154.6	9.78	16.814	
2,400.0	2,396.9	2,387.3	2,384.5	5.2	5.4	-161.40	81.3	50.9	177.9	167.7	10.22	17.411	
2,500.0	2,496.7	2,486.4	2,483.3	5.5	5.6	-162.13	88.0	52.4	191.5	180.8	10.66	17.959	
2,600.0	2,596.4	2,585.4	2,582.1	5.7	5.9	-162.75	94.7	54.0	205.1	194.0	11.11	18.464	
2,700.0	2,696.2	2,684.5	2,680.9	6.0	6.1	-163.30	101.4	55.6	218.7	207.1	11.55	18.930	
2,800.0	2,795.9	2,783.5	2,779.7	6.2	6.4	-163.79	108.2	57.1	232.3	220.3	12.00	19.362	
2,900.0	2,895.7	2,882.6	2,878.5	6.5	6.6	-164.22	114.9	58.7	246.0	233.5	12.45	19.762	
3,000.0	2,995.5	2,981.6	2,977.3	6.7	6.9	-164.60	121.6	60.3	259.6	246.8	12.90	20.135	
3,100.0	3,095.2	3,080.7	3,076.2	7.0	7.1	-164.95	128.4	61.8	273.3	260.0	13.34	20.482	
3,200.0	3,195.0	3,179.7	3,175.0	7.2	7.4	-165.26	135.1	63.4	287.0	273.2	13.79	20.807	
3,300.0	3,294.7	3,278.8	3,273.8	7.5	7.6	-165.55	141.8	65.0	300.7	286.5	14.24	21.111	
3,400.0	3,394.5	3,377.8	3,372.6	7.8	7.9	-165.81	148.5	66.5	314.4	299.7	14.69	21.396	
3,500.0	3,494.2	3,476.8	3,471.4	8.0	8.1	-166.05	155.3	68.1	328.1	312.9	15.14	21.664	
3,600.0	3,594.0	3,575.9	3,570.2	8.3	8.4	-166.27	162.0	69.7	341.8	326.2	15.60	21.916	
3,700.0	3,693.7	3,674.9	3,669.0	8.5	8.6	-166.47	168.7	71.2	355.5	339.5	16.05	22.154	
3,800.0	3,793.5	3,774.0	3,767.8	8.8	8.9	-166.66	175.5	72.8	369.2	352.7	16.50	22.378	
3,900.0	3,893.3	3,873.0	3,866.6	9.0	9.1	-166.83	182.2	74.4	382.9	366.0	16.95	22.591	
4,000.0	3,993.0	3,972.1	3,965.4	9.3	9.4	-166.99	188.9	75.9	396.7	379.3	17.40	22.792	
4,100.0	4,092.8	4,071.1	4,064.2	9.6	9.6	-167.14	195.7	77.5	410.4	392.5	17.86	22.983	
4,200.0	4,192.5	4,170.2	4,163.0	9.8	9.9	-167.28	202.4	79.1	424.1	405.8	18.31	23.164	
4,300.0	4,292.3	4,269.2	4,261.8	10.1	10.1	-167.42	209.1	80.6	437.9	419.1	18.76	23.336	
4,400.0	4,392.0	4,368.3	4,360.6	10.3	10.4	-167.54	215.8	82.2	451.6	432.4	19.22	23.500	
4,500.0	4,491.8	4,467.3	4,459.4	10.6	10.7	-167.66	222.6	83.8	465.3	445.7	19.67	23.656	
4,600.0	4,591.6	4,566.4	4,558.3	10.9	10.9	-167.77	229.3	85.3	479.1	458.9	20.12	23.806	
4,700.0	4,691.3	4,665.4	4,657.1	11.1	11.2	-167.87	236.0	86.9	492.8	472.2	20.58	23.948	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21C-2806B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-2805A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-24.91	74.4	-34.6	82.1				
100.0	100.0	100.0	100.0	0.1	0.1	-24.91	74.4	-34.6	82.1	81.9	0.19	437.382	
200.0	200.0	200.0	200.0	0.3	0.3	-24.91	74.4	-34.6	82.1	81.5	0.64	128.823	
300.0	300.0	300.0	300.0	0.5	0.5	-24.91	74.4	-34.6	82.1	81.0	1.09	75.536	
400.0	400.0	400.0	400.0	0.8	0.8	-24.91	74.4	-34.6	82.1	80.6	1.54	53.433	
500.0	500.0	500.0	500.0	1.0	1.0	-24.91	74.4	-34.6	82.1	80.1	1.99	41.337	
600.0	600.0	600.0	600.0	1.2	1.2	-24.91	74.4	-34.6	82.1	79.7	2.44	33.707	
700.0	700.0	700.0	700.0	1.4	1.4	-24.91	74.4	-34.6	82.1	79.2	2.88	28.455	
800.0	800.0	800.0	800.0	1.7	1.7	-24.91	74.4	-34.6	82.1	78.8	3.33	24.618	
900.0	900.0	900.0	900.0	1.9	1.9	-24.91	74.4	-34.6	82.1	78.3	3.78	21.694	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-24.91	74.4	-34.6	82.1	77.9	4.23	19.390	CC
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	159.35	74.4	-34.6	83.7	79.1	4.65	17.989	
1,200.0	1,199.8	1,199.8	1,199.8	2.5	2.6	160.51	74.4	-34.6	88.6	83.6	5.05	17.552	
1,300.0	1,299.6	1,302.3	1,302.3	2.7	2.8	161.30	72.7	-35.0	93.8	88.4	5.43	17.266	
1,400.0	1,399.4	1,404.9	1,404.7	2.9	2.9	160.75	67.3	-36.3	96.1	90.3	5.80	16.558	
1,500.0	1,499.1	1,504.9	1,504.5	3.1	3.1	159.66	60.5	-37.9	97.1	90.9	6.18	15.698	
1,600.0	1,598.9	1,604.9	1,604.2	3.3	3.3	158.60	53.8	-39.5	98.1	91.5	6.58	14.912	
1,700.0	1,698.6	1,704.9	1,703.9	3.5	3.5	157.55	47.0	-41.1	99.1	92.2	6.98	14.196	
1,800.0	1,798.4	1,804.8	1,803.7	3.8	3.7	156.53	40.2	-42.7	100.2	92.8	7.40	13.544	
1,900.0	1,898.1	1,904.8	1,903.4	4.0	4.0	155.53	33.4	-44.3	101.4	93.5	7.83	12.951	
2,000.0	1,997.9	2,004.8	2,003.2	4.2	4.2	154.55	26.6	-45.9	102.5	94.3	8.26	12.412	
2,100.0	2,097.6	2,104.8	2,102.9	4.5	4.4	153.60	19.8	-47.5	103.7	95.0	8.70	11.920	
2,200.0	2,197.4	2,204.7	2,202.6	4.7	4.7	152.66	13.0	-49.2	104.9	95.8	9.15	11.470	
2,300.0	2,297.2	2,304.7	2,302.4	5.0	4.9	151.75	6.3	-50.8	106.1	96.5	9.60	11.058	
2,400.0	2,396.9	2,404.7	2,402.1	5.2	5.1	150.86	-0.5	-52.4	107.4	97.3	10.06	10.681	
2,500.0	2,496.7	2,504.7	2,501.8	5.5	5.4	149.99	-7.3	-54.0	108.7	98.2	10.52	10.334	
2,600.0	2,596.4	2,604.7	2,601.6	5.7	5.6	149.14	-14.1	-55.6	110.0	99.0	10.98	10.015	
2,700.0	2,696.2	2,704.6	2,701.3	6.0	5.9	148.31	-20.9	-57.2	111.3	99.9	11.46	9.720	
2,800.0	2,795.9	2,804.6	2,801.0	6.2	6.1	147.51	-27.7	-58.8	112.7	100.8	11.93	9.447	
2,900.0	2,895.7	2,904.6	2,900.8	6.5	6.4	146.72	-34.5	-60.4	114.1	101.7	12.41	9.195	
3,000.0	2,995.5	3,004.6	3,000.5	6.7	6.6	145.94	-41.2	-62.0	115.5	102.6	12.89	8.961	
3,100.0	3,095.2	3,104.5	3,100.2	7.0	6.9	145.19	-48.0	-63.6	116.9	103.5	13.37	8.743	
3,200.0	3,195.0	3,204.5	3,200.0	7.2	7.1	144.46	-54.8	-65.3	118.4	104.5	13.86	8.540	
3,300.0	3,294.7	3,304.5	3,299.7	7.5	7.4	143.74	-61.6	-66.9	119.8	105.5	14.35	8.350	
3,400.0	3,394.5	3,404.5	3,399.4	7.8	7.6	143.04	-68.4	-68.5	121.3	106.5	14.84	8.173	
3,500.0	3,494.2	3,504.5	3,499.2	8.0	7.9	142.36	-75.2	-70.1	122.8	107.5	15.33	8.008	
3,600.0	3,594.0	3,604.4	3,598.9	8.3	8.1	141.70	-82.0	-71.7	124.3	108.5	15.83	7.852	
3,700.0	3,693.7	3,704.4	3,698.6	8.5	8.4	141.05	-88.7	-73.3	125.8	109.5	16.33	7.707	
3,800.0	3,793.5	3,804.4	3,798.4	8.8	8.6	140.41	-95.5	-74.9	127.4	110.6	16.83	7.570	
3,900.0	3,893.3	3,904.4	3,898.1	9.0	8.9	139.80	-102.3	-76.5	128.9	111.6	17.33	7.441	
4,000.0	3,993.0	4,004.4	3,997.8	9.3	9.1	139.19	-109.1	-78.1	130.5	112.7	17.83	7.319	
4,100.0	4,092.8	4,104.3	4,097.6	9.6	9.4	138.60	-115.9	-79.8	132.1	113.8	18.34	7.204	
4,200.0	4,192.5	4,204.3	4,197.3	9.8	9.7	138.03	-122.7	-81.4	133.7	114.9	18.84	7.096	
4,300.0	4,292.3	4,304.3	4,297.0	10.1	9.9	137.47	-129.5	-83.0	135.3	116.0	19.35	6.993	
4,400.0	4,392.0	4,404.3	4,396.8	10.3	10.2	136.92	-136.2	-84.6	137.0	117.1	19.86	6.896	
4,500.0	4,491.8	4,504.2	4,496.5	10.6	10.4	136.39	-143.0	-86.2	138.6	118.2	20.37	6.804	
4,600.0	4,591.6	4,604.2	4,596.3	10.9	10.7	135.86	-149.8	-87.8	140.3	119.4	20.88	6.717	
4,700.0	4,691.3	4,704.2	4,696.0	11.1	11.0	135.35	-156.6	-89.4	141.9	120.5	21.40	6.634	
4,800.0	4,791.1	4,804.2	4,795.7	11.4	11.2	134.85	-163.4	-91.0	143.6	121.7	21.91	6.555	
4,900.0	4,890.8	4,904.2	4,895.5	11.7	11.5	134.37	-170.2	-92.6	145.3	122.9	22.42	6.480	
5,000.0	4,990.6	5,004.1	4,995.2	11.9	11.7	133.89	-177.0	-94.2	147.0	124.1	22.94	6.408	
5,100.0	5,090.3	5,104.1	5,094.9	12.2	12.0	133.43	-183.7	-95.9	148.7	125.2	23.45	6.340	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21C-2806B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-2805A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,190.1	5,204.1	5,194.7	12.4	12.3	132.97	-190.5	-97.5	150.4	126.4	23.97	6.275	
5,300.0	5,289.9	5,304.1	5,294.4	12.7	12.5	132.53	-197.3	-99.1	152.1	127.7	24.49	6.213	
5,400.0	5,389.6	5,413.4	5,402.8	13.0	12.9	129.97	-210.6	-102.2	151.7	126.5	25.16	6.030	
5,492.8	5,481.4	5,514.6	5,498.6	13.3	13.3	122.95	-241.5	-109.6	149.6	123.6	26.03	5.748	
5,500.0	5,488.6	5,521.7	5,505.2	13.3	13.4	121.89	-244.4	-110.2	148.9	122.8	26.11	5.702	
5,600.0	5,583.2	5,624.6	5,593.8	13.8	14.1	112.34	-294.9	-122.2	153.9	126.6	27.36	5.626	
5,700.0	5,670.1	5,722.3	5,667.0	14.4	14.9	102.77	-357.6	-137.1	167.5	138.5	29.00	5.775	
5,800.0	5,746.0	5,815.4	5,724.4	15.3	15.8	94.21	-428.7	-154.0	188.4	157.5	30.93	6.092	
5,900.0	5,808.1	5,904.5	5,766.3	16.3	16.9	87.04	-505.2	-172.1	214.6	181.7	32.94	6.516	
6,000.0	5,854.2	5,990.6	5,793.6	17.5	18.1	81.24	-584.5	-191.0	244.0	209.1	34.97	6.980	
6,100.0	5,882.5	6,074.4	5,806.9	18.9	19.3	76.62	-664.9	-210.0	274.9	237.9	37.04	7.423	
6,200.0	5,892.0	6,172.0	5,808.5	20.4	20.7	73.52	-760.1	-231.8	304.6	265.1	39.47	7.718	
6,300.0	5,892.0	6,288.2	5,808.5	21.8	22.2	74.94	-874.5	-251.8	325.1	282.3	42.80	7.595	
6,400.0	5,892.0	6,407.6	5,808.5	23.2	23.9	75.56	-993.1	-265.0	336.0	290.0	46.01	7.303	
6,500.0	5,892.0	6,528.2	5,808.5	24.9	25.7	75.81	-1,113.5	-270.9	340.7	291.3	49.40	6.898	
6,600.0	5,892.0	6,633.8	5,808.5	26.5	27.4	75.82	-1,219.1	-271.1	340.9	288.3	52.66	6.474	
6,700.0	5,892.0	6,733.8	5,808.5	28.2	29.0	75.82	-1,319.1	-271.1	340.9	285.0	55.96	6.093	
6,800.0	5,892.0	6,833.8	5,808.5	30.0	30.7	75.82	-1,419.1	-271.2	341.0	281.6	59.31	5.748	
6,900.0	5,892.0	6,933.8	5,808.4	31.7	32.4	75.81	-1,519.1	-271.2	341.0	278.2	62.70	5.437	
7,000.0	5,892.0	7,033.8	5,808.4	33.5	34.2	75.81	-1,619.1	-271.2	341.0	274.8	66.14	5.155	
7,100.0	5,892.0	7,133.8	5,808.4	35.3	35.9	75.81	-1,719.1	-271.2	341.0	271.4	69.60	4.899	
7,200.0	5,892.0	7,233.8	5,808.4	37.1	37.7	75.81	-1,819.1	-271.2	341.0	267.9	73.09	4.665	
7,300.0	5,892.0	7,333.8	5,808.4	38.9	39.5	75.81	-1,919.1	-271.2	341.0	264.4	76.60	4.451	
7,400.0	5,892.0	7,433.8	5,808.4	40.7	41.3	75.81	-2,019.1	-271.2	341.0	260.8	80.13	4.255	
7,500.0	5,892.0	7,533.8	5,808.4	42.5	43.1	75.81	-2,119.1	-271.2	341.0	257.3	83.68	4.075	
7,600.0	5,892.0	7,633.8	5,808.4	44.3	44.9	75.81	-2,219.1	-271.2	341.0	253.7	87.25	3.908	
7,700.0	5,892.0	7,733.8	5,808.4	46.2	46.7	75.81	-2,319.1	-271.2	341.0	250.2	90.83	3.754	
7,800.0	5,892.0	7,833.8	5,808.4	48.0	48.6	75.80	-2,419.1	-271.2	341.0	246.6	94.42	3.611	
7,900.0	5,892.0	7,933.8	5,808.4	49.9	50.4	75.80	-2,519.1	-271.2	341.0	243.0	98.02	3.479	
8,000.0	5,892.0	8,033.8	5,808.4	51.7	52.2	75.80	-2,619.1	-271.2	341.0	239.4	101.63	3.355	
8,100.0	5,892.0	8,133.8	5,808.4	53.6	54.1	75.80	-2,719.1	-271.2	341.0	235.7	105.25	3.240	
8,200.0	5,892.0	8,233.8	5,808.3	55.5	56.0	75.80	-2,819.1	-271.2	341.0	232.1	108.88	3.132	
8,300.0	5,892.0	8,333.8	5,808.3	57.3	57.8	75.80	-2,919.1	-271.2	341.0	228.5	112.51	3.031	
8,400.0	5,892.0	8,433.8	5,808.3	59.2	59.7	75.80	-3,019.1	-271.2	341.0	224.9	116.15	2.936	
8,500.0	5,892.0	8,533.8	5,808.3	61.1	61.5	75.80	-3,119.1	-271.2	341.0	221.2	119.80	2.847	
8,600.0	5,892.0	8,633.8	5,808.3	63.0	63.4	75.80	-3,219.1	-271.3	341.0	217.6	123.45	2.762	
8,700.0	5,892.0	8,733.8	5,808.3	64.8	65.3	75.79	-3,319.1	-271.3	341.0	213.9	127.11	2.683	
8,800.0	5,892.0	8,833.8	5,808.3	66.7	67.2	75.79	-3,419.1	-271.3	341.0	210.3	130.77	2.608	
8,900.0	5,892.0	8,933.8	5,808.3	68.6	69.0	75.79	-3,519.1	-271.3	341.0	206.6	134.43	2.537	
9,000.0	5,892.0	9,033.8	5,808.3	70.5	70.9	75.79	-3,619.1	-271.3	341.0	202.9	138.10	2.469	
9,100.0	5,892.0	9,133.8	5,808.3	72.4	72.8	75.79	-3,719.1	-271.3	341.0	199.3	141.78	2.405	
9,200.0	5,892.0	9,233.8	5,808.3	74.3	74.7	75.79	-3,819.1	-271.3	341.0	195.6	145.45	2.345	
9,300.0	5,892.0	9,333.8	5,808.3	76.1	76.6	75.79	-3,919.1	-271.3	341.0	191.9	149.13	2.287	
9,400.0	5,892.0	9,433.8	5,808.3	78.0	78.4	75.79	-4,019.1	-271.3	341.0	188.2	152.81	2.232	
9,500.0	5,892.0	9,533.8	5,808.2	79.9	80.3	75.78	-4,119.1	-271.3	341.1	184.6	156.49	2.179	
9,600.0	5,892.0	9,633.8	5,808.2	81.8	82.2	75.78	-4,219.1	-271.3	341.1	180.9	160.18	2.129	
9,700.0	5,892.0	9,733.8	5,808.2	83.7	84.1	75.78	-4,319.1	-271.3	341.1	177.2	163.86	2.081	
9,800.0	5,892.0	9,833.8	5,808.2	85.6	86.0	75.78	-4,419.1	-271.3	341.1	173.5	167.55	2.036	
9,900.0	5,892.0	9,933.8	5,808.2	87.5	87.9	75.78	-4,519.1	-271.3	341.1	169.8	171.25	1.992	
10,000.0	5,892.0	10,033.8	5,808.2	89.4	89.8	75.78	-4,619.1	-271.3	341.1	166.1	174.94	1.950	
10,100.0	5,892.0	10,133.8	5,808.2	91.3	91.7	75.78	-4,719.1	-271.3	341.1	162.4	178.63	1.909	
10,200.0	5,892.0	10,233.8	5,808.2	93.2	93.6	75.78	-4,819.1	-271.3	341.1	158.7	182.33	1.871	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21C-2806B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-2805A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
10,300.0	5,892.0	10,333.8	5,808.2	95.1	95.5	75.78	-4,919.1	-271.4	341.1	155.1	186.03	1.834	
10,400.0	5,892.0	10,433.8	5,808.2	97.0	97.4	75.77	-5,019.1	-271.4	341.1	151.4	189.73	1.798	
10,500.0	5,892.0	10,533.8	5,808.2	98.9	99.3	75.77	-5,119.1	-271.4	341.1	147.7	193.43	1.763	
10,600.0	5,892.0	10,633.8	5,808.2	100.8	101.2	75.77	-5,219.1	-271.4	341.1	144.0	197.13	1.730	
10,700.0	5,892.0	10,733.8	5,808.2	102.7	103.1	75.77	-5,319.1	-271.4	341.1	140.3	200.83	1.698	
10,800.0	5,892.0	10,833.8	5,808.1	104.6	105.0	75.77	-5,419.1	-271.4	341.1	136.6	204.53	1.668	
10,900.0	5,892.0	10,933.8	5,808.1	106.5	106.9	75.77	-5,519.1	-271.4	341.1	132.9	208.24	1.638	
11,000.0	5,892.0	11,033.8	5,808.1	108.4	108.8	75.77	-5,619.1	-271.4	341.1	129.2	211.94	1.609	
11,100.0	5,892.0	11,133.8	5,808.1	110.3	110.7	75.77	-5,719.1	-271.4	341.1	125.5	215.65	1.582	
11,200.0	5,892.0	11,233.8	5,808.1	112.2	112.6	75.76	-5,819.1	-271.4	341.1	121.8	219.36	1.555	
11,300.0	5,892.0	11,333.8	5,808.1	114.1	114.5	75.76	-5,919.1	-271.4	341.1	118.1	223.07	1.529	
11,400.0	5,892.0	11,433.8	5,808.1	116.0	116.4	75.76	-6,019.1	-271.4	341.1	114.3	226.78	1.504	
11,500.0	5,892.0	11,533.8	5,808.1	117.9	118.3	75.76	-6,119.1	-271.4	341.1	110.6	230.49	1.480	Level 3
11,600.0	5,892.0	11,633.8	5,808.1	119.9	120.2	75.76	-6,219.1	-271.4	341.1	106.9	234.20	1.457	Level 3
11,700.0	5,892.0	11,733.8	5,808.1	121.8	122.1	75.76	-6,319.1	-271.4	341.1	103.2	237.91	1.434	Level 3
11,800.0	5,892.0	11,833.8	5,808.1	123.7	124.0	75.76	-6,419.1	-271.4	341.1	99.5	241.62	1.412	Level 3
11,900.0	5,892.0	11,933.8	5,808.1	125.6	125.9	75.76	-6,519.1	-271.4	341.1	95.8	245.33	1.391	Level 3
12,000.0	5,892.0	12,033.8	5,808.1	127.5	127.8	75.76	-6,619.1	-271.4	341.1	92.1	249.04	1.370	Level 3
12,100.0	5,892.0	12,133.8	5,808.1	129.4	129.7	75.75	-6,719.1	-271.5	341.1	88.4	252.76	1.350	Level 3
12,200.0	5,892.0	12,233.8	5,808.0	131.3	131.6	75.75	-6,819.1	-271.5	341.2	84.7	256.47	1.330	Level 3
12,300.0	5,892.0	12,333.8	5,808.0	133.2	133.5	75.75	-6,919.1	-271.5	341.2	81.0	260.19	1.311	Level 3
12,400.0	5,892.0	12,433.8	5,808.0	135.1	135.4	75.75	-7,019.1	-271.5	341.2	77.3	263.90	1.293	Level 3
12,500.0	5,892.0	12,533.8	5,808.0	137.0	137.3	75.75	-7,119.1	-271.5	341.2	73.5	267.62	1.275	Level 3
12,600.0	5,892.0	12,633.8	5,808.0	138.9	139.2	75.75	-7,219.1	-271.5	341.2	69.8	271.33	1.257	Level 3
12,700.0	5,892.0	12,733.8	5,808.0	140.8	141.0	75.75	-7,319.1	-271.5	341.2	66.2	274.93	1.241	Level 2
12,760.0	5,892.0	12,793.7	5,808.0	142.0	142.0	75.75	-7,379.1	-271.5	341.2	64.2	276.96	1.232	Level 2, ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21C-2806B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-2807A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	22.11	75.6	30.7	81.6				
100.0	100.0	100.0	100.0	0.1	0.1	22.11	75.6	30.7	81.6	81.4	0.19	434.894	
200.0	200.0	200.0	200.0	0.3	0.3	22.11	75.6	30.7	81.6	81.0	0.64	128.091	
300.0	300.0	300.0	300.0	0.5	0.5	22.11	75.6	30.7	81.6	80.5	1.09	75.106	
400.0	400.0	400.0	400.0	0.8	0.8	22.11	75.6	30.7	81.6	80.1	1.54	53.129	
500.0	500.0	500.0	500.0	1.0	1.0	22.11	75.6	30.7	81.6	79.6	1.99	41.102	
600.0	600.0	602.2	602.2	1.2	1.2	22.95	73.9	31.3	80.3	77.9	2.41	33.252	
700.0	700.0	704.0	703.9	1.4	1.4	25.63	68.7	33.0	76.3	73.5	2.83	26.943	
800.0	800.0	803.8	803.4	1.7	1.6	29.49	62.1	35.1	71.4	68.2	3.26	21.892	
900.0	900.0	903.5	902.9	1.9	1.8	33.90	55.5	37.3	66.9	63.2	3.71	18.058	
1,000.0	1,000.0	1,003.3	1,002.4	2.1	2.1	38.90	48.9	39.4	62.8	58.7	4.16	15.108	
1,100.0	1,100.0	1,103.1	1,102.0	2.3	2.3	-132.86	42.2	41.6	60.5	55.9	4.60	13.159	
1,138.9	1,138.9	1,142.1	1,140.8	2.4	2.4	-131.73	39.7	42.4	60.3	55.5	4.76	12.671	CC, ES
1,200.0	1,199.8	1,203.1	1,201.7	2.5	2.5	-130.70	35.6	43.8	60.7	55.7	5.01	12.117	
1,300.0	1,299.6	1,303.1	1,301.5	2.7	2.8	-129.82	29.0	45.9	62.2	56.7	5.45	11.422	
1,400.0	1,399.4	1,403.1	1,401.2	2.9	3.0	-128.98	22.4	48.1	63.6	57.8	5.89	10.806	
1,500.0	1,499.1	1,503.1	1,501.0	3.1	3.3	-128.18	15.7	50.2	65.1	58.8	6.35	10.262	
1,600.0	1,598.9	1,603.1	1,600.7	3.3	3.6	-127.41	9.1	52.4	66.6	59.8	6.81	9.780	
1,700.0	1,698.6	1,703.0	1,700.4	3.5	3.8	-126.68	2.5	54.6	68.1	60.8	7.28	9.352	
1,800.0	1,798.4	1,803.0	1,800.2	3.8	4.1	-125.98	-4.2	56.7	69.6	61.8	7.76	8.970	
1,900.0	1,898.1	1,903.0	1,899.9	4.0	4.3	-125.31	-10.8	58.9	71.1	62.9	8.24	8.627	
2,000.0	1,997.9	2,003.0	1,999.7	4.2	4.6	-124.67	-17.4	61.0	72.6	63.9	8.73	8.320	
2,100.0	2,097.6	2,103.0	2,099.4	4.5	4.8	-124.05	-24.1	63.2	74.2	64.9	9.22	8.042	
2,200.0	2,197.4	2,203.0	2,199.1	4.7	5.1	-123.46	-30.7	65.4	75.7	66.0	9.72	7.791	
2,300.0	2,297.2	2,303.0	2,298.9	5.0	5.4	-122.89	-37.3	67.5	77.3	67.0	10.22	7.562	
2,400.0	2,396.9	2,402.9	2,398.6	5.2	5.6	-122.34	-44.0	69.7	78.8	68.1	10.72	7.354	
2,500.0	2,496.7	2,502.9	2,498.4	5.5	5.9	-121.82	-50.6	71.9	80.4	69.2	11.22	7.163	
2,600.0	2,596.4	2,602.9	2,598.1	5.7	6.1	-121.32	-57.2	74.0	81.9	70.2	11.73	6.988	
2,700.0	2,696.2	2,702.9	2,697.9	6.0	6.4	-120.83	-63.9	76.2	83.5	71.3	12.23	6.827	
2,800.0	2,795.9	2,802.9	2,797.6	6.2	6.7	-120.36	-70.5	78.3	85.1	72.4	12.74	6.679	
2,900.0	2,895.7	2,902.9	2,897.3	6.5	6.9	-119.91	-77.1	80.5	86.7	73.4	13.25	6.541	
3,000.0	2,995.5	3,002.9	2,997.1	6.7	7.2	-119.48	-83.7	82.7	88.3	74.5	13.76	6.414	
3,100.0	3,095.2	3,102.8	3,096.8	7.0	7.5	-119.06	-90.4	84.8	89.9	75.6	14.28	6.295	
3,200.0	3,195.0	3,202.8	3,196.6	7.2	7.7	-118.65	-97.0	87.0	91.5	76.7	14.79	6.185	
3,300.0	3,294.7	3,302.8	3,296.3	7.5	8.0	-118.26	-103.6	89.1	93.1	77.8	15.31	6.082	
3,400.0	3,394.5	3,402.8	3,396.0	7.8	8.2	-117.89	-110.3	91.3	94.7	78.9	15.82	5.985	
3,500.0	3,494.2	3,502.8	3,495.8	8.0	8.5	-117.52	-116.9	93.5	96.3	80.0	16.34	5.895	
3,600.0	3,594.0	3,602.8	3,595.5	8.3	8.8	-117.17	-123.5	95.6	97.9	81.1	16.86	5.810	
3,700.0	3,693.7	3,702.7	3,695.3	8.5	9.0	-116.83	-130.2	97.8	99.6	82.2	17.38	5.729	
3,800.0	3,793.5	3,802.7	3,795.0	8.8	9.3	-116.50	-136.8	99.9	101.2	83.3	17.89	5.654	
3,900.0	3,893.3	3,902.7	3,894.8	9.0	9.6	-116.18	-143.4	102.1	102.8	84.4	18.42	5.583	
4,000.0	3,993.0	4,002.7	3,994.5	9.3	9.8	-115.87	-150.1	104.3	104.4	85.5	18.94	5.515	
4,100.0	4,092.8	4,102.7	4,094.2	9.6	10.1	-115.57	-156.7	106.4	106.1	86.6	19.46	5.451	
4,200.0	4,192.5	4,202.7	4,194.0	9.8	10.4	-115.28	-163.3	108.6	107.7	87.7	19.98	5.391	
4,300.0	4,292.3	4,302.7	4,293.7	10.1	10.6	-115.00	-170.0	110.7	109.3	88.8	20.50	5.334	
4,400.0	4,392.0	4,402.6	4,393.5	10.3	10.9	-114.72	-176.6	112.9	111.0	90.0	21.02	5.279	
4,500.0	4,491.8	4,502.6	4,493.2	10.6	11.1	-114.46	-183.2	115.1	112.6	91.1	21.55	5.227	
4,600.0	4,591.6	4,602.6	4,592.9	10.9	11.4	-114.20	-189.9	117.2	114.3	92.2	22.07	5.178	
4,700.0	4,691.3	4,702.6	4,692.7	11.1	11.7	-113.95	-196.5	119.4	115.9	93.3	22.59	5.131	
4,800.0	4,791.1	4,802.6	4,792.4	11.4	11.9	-113.71	-203.1	121.6	117.6	94.5	23.12	5.086	
4,900.0	4,890.8	4,902.6	4,892.2	11.7	12.2	-113.47	-209.7	123.7	119.2	95.6	23.64	5.043	
5,000.0	4,990.6	5,002.6	4,991.9	11.9	12.5	-113.24	-216.4	125.9	120.9	96.7	24.17	5.002	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21C-2806B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-2807A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,090.3	5,102.5	5,091.7	12.2	12.7	-113.01	-223.0	128.0	122.5	97.9	24.69	4.963	
5,200.0	5,190.1	5,202.5	5,191.4	12.4	13.0	-112.80	-229.6	130.2	124.2	99.0	25.21	4.926	
5,300.0	5,289.9	5,302.5	5,291.1	12.7	13.3	-112.58	-236.3	132.4	125.9	100.1	25.74	4.890	
5,400.0	5,389.6	5,404.5	5,392.4	13.0	13.6	-110.30	-247.4	136.0	127.0	100.6	26.36	4.816	
5,500.0	5,488.6	5,504.1	5,487.4	13.3	14.1	-102.48	-275.3	145.1	129.5	102.3	27.25	4.755	
5,600.0	5,583.2	5,600.0	5,572.0	13.8	14.7	-94.66	-317.9	159.0	138.8	110.4	28.38	4.890	
5,700.0	5,670.1	5,692.9	5,644.9	14.4	15.5	-87.85	-372.5	176.8	153.8	124.0	29.77	5.167	
5,800.0	5,746.0	5,782.9	5,704.6	15.3	16.4	-82.38	-436.3	197.5	173.2	141.8	31.32	5.529	
5,900.0	5,808.1	5,870.4	5,750.8	16.3	17.5	-78.18	-506.9	220.5	195.4	162.3	33.03	5.914	
6,000.0	5,854.2	5,956.0	5,783.4	17.5	18.6	-75.04	-582.1	245.1	219.2	184.2	34.94	6.272	
6,100.0	5,882.5	6,040.4	5,802.4	18.9	19.9	-72.74	-660.1	270.5	243.5	206.4	37.11	6.562	
6,200.0	5,892.0	6,126.5	5,808.0	20.4	21.2	-71.18	-741.8	297.1	267.6	228.0	39.59	6.758	
6,300.0	5,892.0	6,239.4	5,808.0	21.8	22.9	-72.72	-850.2	328.3	290.2	247.4	42.74	6.789	
6,400.0	5,892.0	6,354.4	5,808.0	23.2	24.6	-74.05	-962.4	353.5	311.0	265.0	46.00	6.762	
6,500.0	5,892.0	6,472.1	5,808.0	24.9	26.3	-74.96	-1,078.6	372.2	326.4	276.9	49.53	6.589	
6,600.0	5,892.0	6,591.7	5,808.0	26.5	28.1	-75.48	-1,197.6	383.8	335.8	282.7	53.10	6.324	
6,700.0	5,892.0	6,712.3	5,808.0	28.2	30.0	-75.66	-1,318.1	388.0	339.2	282.5	56.67	5.986	
6,800.0	5,892.0	6,813.3	5,808.0	30.0	31.6	-75.66	-1,419.1	388.1	339.2	279.2	59.98	5.655	
6,900.0	5,892.0	6,913.3	5,808.0	31.7	33.3	-75.66	-1,519.1	388.1	339.2	275.9	63.37	5.353	
7,000.0	5,892.0	7,013.3	5,808.0	33.5	35.0	-75.66	-1,619.1	388.1	339.2	272.4	66.79	5.079	
7,100.0	5,892.0	7,113.3	5,808.0	35.3	36.8	-75.66	-1,719.1	388.1	339.2	269.0	70.25	4.829	
7,200.0	5,892.0	7,213.3	5,808.0	37.1	38.5	-75.66	-1,819.1	388.1	339.2	265.5	73.73	4.601	
7,300.0	5,892.0	7,313.3	5,808.0	38.9	40.3	-75.66	-1,919.1	388.1	339.3	262.0	77.24	4.392	
7,400.0	5,892.0	7,413.3	5,808.0	40.7	42.1	-75.66	-2,019.1	388.1	339.3	258.5	80.77	4.201	
7,500.0	5,892.0	7,513.3	5,808.0	42.5	43.8	-75.66	-2,119.1	388.1	339.3	255.0	84.31	4.024	
7,600.0	5,892.0	7,613.3	5,808.0	44.3	45.6	-75.66	-2,219.1	388.1	339.3	251.4	87.87	3.861	
7,700.0	5,892.0	7,713.3	5,808.0	46.2	47.5	-75.66	-2,319.1	388.1	339.3	247.8	91.45	3.710	
7,800.0	5,892.0	7,813.3	5,808.0	48.0	49.3	-75.66	-2,419.1	388.1	339.3	244.3	95.04	3.570	
7,900.0	5,892.0	7,913.3	5,808.0	49.9	51.1	-75.66	-2,519.1	388.1	339.3	240.7	98.63	3.440	
8,000.0	5,892.0	8,013.3	5,808.0	51.7	52.9	-75.66	-2,619.1	388.1	339.3	237.1	102.24	3.319	
8,100.0	5,892.0	8,113.3	5,808.0	53.6	54.8	-75.67	-2,719.1	388.1	339.3	233.5	105.86	3.205	
8,200.0	5,892.0	8,213.3	5,808.0	55.5	56.6	-75.67	-2,819.1	388.1	339.3	229.8	109.48	3.099	
8,300.0	5,892.0	8,313.3	5,808.0	57.3	58.5	-75.67	-2,919.1	388.1	339.3	226.2	113.11	3.000	
8,400.0	5,892.0	8,413.3	5,808.0	59.2	60.3	-75.67	-3,019.1	388.1	339.3	222.6	116.75	2.907	
8,500.0	5,892.0	8,513.3	5,808.0	61.1	62.2	-75.67	-3,119.1	388.1	339.4	219.0	120.40	2.819	
8,600.0	5,892.0	8,613.3	5,808.0	63.0	64.0	-75.67	-3,219.1	388.1	339.4	215.3	124.05	2.736	
8,700.0	5,892.0	8,713.3	5,808.0	64.8	65.9	-75.67	-3,319.1	388.1	339.4	211.7	127.70	2.658	
8,800.0	5,892.0	8,813.3	5,808.0	66.7	67.8	-75.67	-3,419.1	388.1	339.4	208.0	131.36	2.584	
8,900.0	5,892.0	8,913.3	5,808.0	68.6	69.6	-75.67	-3,519.1	388.2	339.4	204.4	135.02	2.514	
9,000.0	5,892.0	9,013.3	5,808.0	70.5	71.5	-75.67	-3,619.1	388.2	339.4	200.7	138.69	2.447	
9,100.0	5,892.0	9,113.3	5,808.0	72.4	73.4	-75.67	-3,719.1	388.2	339.4	197.0	142.36	2.384	
9,200.0	5,892.0	9,213.3	5,808.0	74.3	75.2	-75.67	-3,819.1	388.2	339.4	193.4	146.03	2.324	
9,300.0	5,892.0	9,313.3	5,808.0	76.1	77.1	-75.67	-3,919.1	388.2	339.4	189.7	149.71	2.267	
9,400.0	5,892.0	9,413.3	5,808.0	78.0	79.0	-75.67	-4,019.1	388.2	339.4	186.0	153.39	2.213	
9,500.0	5,892.0	9,513.3	5,808.0	79.9	80.9	-75.67	-4,119.1	388.2	339.4	182.4	157.07	2.161	
9,600.0	5,892.0	9,613.3	5,808.0	81.8	82.8	-75.67	-4,219.1	388.2	339.4	178.7	160.76	2.112	
9,700.0	5,892.0	9,713.3	5,808.0	83.7	84.7	-75.67	-4,319.1	388.2	339.5	175.0	164.44	2.064	
9,800.0	5,892.0	9,813.3	5,808.0	85.6	86.5	-75.67	-4,419.1	388.2	339.5	171.3	168.13	2.019	
9,900.0	5,892.0	9,913.3	5,808.0	87.5	88.4	-75.67	-4,519.1	388.2	339.5	167.7	171.82	1.976	
10,000.0	5,892.0	10,013.3	5,808.0	89.4	90.3	-75.67	-4,619.1	388.2	339.5	164.0	175.51	1.934	
10,100.0	5,892.0	10,113.3	5,808.0	91.3	92.2	-75.67	-4,719.1	388.2	339.5	160.3	179.21	1.894	
10,200.0	5,892.0	10,213.3	5,808.0	93.2	94.1	-75.67	-4,819.1	388.2	339.5	156.6	182.90	1.856	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21C-2806B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-2807A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
10,300.0	5,892.0	10,313.3	5,808.0	95.1	96.0	-75.67	-4,919.1	388.2	339.5	152.9	186.60	1.819	
10,400.0	5,892.0	10,413.3	5,808.0	97.0	97.9	-75.67	-5,019.1	388.2	339.5	149.2	190.30	1.784	
10,500.0	5,892.0	10,513.3	5,808.0	98.9	99.8	-75.67	-5,119.1	388.2	339.5	145.5	194.00	1.750	
10,600.0	5,892.0	10,613.3	5,808.0	100.8	101.7	-75.68	-5,219.1	388.2	339.5	141.8	197.70	1.717	
10,700.0	5,892.0	10,713.3	5,808.0	102.7	103.6	-75.68	-5,319.1	388.2	339.5	138.1	201.40	1.686	
10,800.0	5,892.0	10,813.3	5,808.0	104.6	105.5	-75.68	-5,419.1	388.2	339.5	134.4	205.11	1.655	
10,900.0	5,892.0	10,913.3	5,808.0	106.5	107.4	-75.68	-5,519.1	388.2	339.6	130.7	208.81	1.626	
11,000.0	5,892.0	11,013.3	5,808.0	108.4	109.3	-75.68	-5,619.1	388.3	339.6	127.0	212.52	1.598	
11,100.0	5,892.0	11,113.3	5,808.0	110.3	111.2	-75.68	-5,719.1	388.3	339.6	123.3	216.22	1.570	
11,200.0	5,892.0	11,213.3	5,808.0	112.2	113.1	-75.68	-5,819.1	388.3	339.6	119.6	219.93	1.544	
11,300.0	5,892.0	11,313.3	5,808.0	114.1	115.0	-75.68	-5,919.1	388.3	339.6	115.9	223.64	1.518	
11,400.0	5,892.0	11,413.3	5,808.0	116.0	116.9	-75.68	-6,019.1	388.3	339.6	112.2	227.35	1.494	Level 3
11,500.0	5,892.0	11,513.3	5,808.0	117.9	118.8	-75.68	-6,119.1	388.3	339.6	108.5	231.06	1.470	Level 3
11,600.0	5,892.0	11,613.3	5,808.0	119.9	120.7	-75.68	-6,219.1	388.3	339.6	104.8	234.77	1.447	Level 3
11,700.0	5,892.0	11,713.3	5,808.0	121.8	122.6	-75.68	-6,319.1	388.3	339.6	101.1	238.48	1.424	Level 3
11,800.0	5,892.0	11,813.3	5,808.0	123.7	124.5	-75.68	-6,419.1	388.3	339.6	97.4	242.20	1.402	Level 3
11,900.0	5,892.0	11,913.3	5,808.0	125.6	126.4	-75.68	-6,519.1	388.3	339.6	93.7	245.91	1.381	Level 3
12,000.0	5,892.0	12,013.3	5,808.0	127.5	128.3	-75.68	-6,619.1	388.3	339.6	90.0	249.62	1.361	Level 3
12,100.0	5,892.0	12,113.3	5,808.0	129.4	130.2	-75.68	-6,719.1	388.3	339.7	86.3	253.34	1.341	Level 3
12,200.0	5,892.0	12,213.3	5,808.0	131.3	132.1	-75.68	-6,819.1	388.3	339.7	82.6	257.05	1.321	Level 3
12,300.0	5,892.0	12,313.3	5,808.0	133.2	134.0	-75.68	-6,919.1	388.3	339.7	78.9	260.77	1.303	Level 3
12,400.0	5,892.0	12,413.3	5,808.0	135.1	135.9	-75.68	-7,019.1	388.3	339.7	75.2	264.48	1.284	Level 3
12,500.0	5,892.0	12,513.3	5,808.0	137.0	137.8	-75.68	-7,119.1	388.3	339.7	71.5	268.20	1.267	Level 3
12,600.0	5,892.0	12,613.3	5,808.0	138.9	139.7	-75.68	-7,219.1	388.3	339.7	67.8	271.92	1.249	Level 2
12,700.0	5,892.0	12,713.3	5,808.0	140.8	141.6	-75.68	-7,319.1	388.3	339.7	64.1	275.63	1.232	Level 2
12,731.6	5,892.0	12,744.9	5,808.0	141.4	142.2	-75.68	-7,350.7	388.3	339.7	62.9	276.79	1.227	Level 2
12,760.0	5,892.0	12,766.2	5,808.0	142.0	142.6	-75.68	-7,372.0	388.3	339.8	62.1	277.73	1.223	Level 2, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21C-2806B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-2808B - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	88.97	1.2	65.3	65.3				
100.0	100.0	100.0	100.0	0.1	0.1	88.97	1.2	65.3	65.3	65.1	0.19	347.995	
200.0	200.0	200.0	200.0	0.3	0.3	88.97	1.2	65.3	65.3	64.7	0.64	102.496	
300.0	300.0	300.0	300.0	0.5	0.5	88.97	1.2	65.3	65.3	64.2	1.09	60.099	
400.0	400.0	400.0	400.0	0.8	0.8	88.97	1.2	65.3	65.3	63.8	1.54	42.513	
500.0	500.0	500.0	500.0	1.0	1.0	88.97	1.2	65.3	65.3	63.3	1.99	32.889	
600.0	600.0	600.0	600.0	1.2	1.2	88.97	1.2	65.3	65.3	62.9	2.44	26.818	
700.0	700.0	700.0	700.0	1.4	1.4	88.97	1.2	65.3	65.3	62.4	2.88	22.639	
800.0	800.0	800.0	800.0	1.7	1.7	88.97	1.2	65.3	65.3	62.0	3.33	19.587	CC, ES
900.0	900.0	898.9	898.9	1.9	1.9	90.27	-0.3	66.1	66.1	62.4	3.76	17.615	
1,000.0	1,000.0	997.6	997.4	2.1	2.0	93.97	-4.8	68.6	68.8	64.7	4.16	16.549	
1,100.0	1,100.0	1,097.4	1,097.0	2.3	2.2	-78.87	-10.8	72.0	72.6	68.0	4.55	15.948	
1,200.0	1,199.8	1,197.3	1,196.7	2.5	2.5	-78.46	-16.9	75.5	75.7	70.8	4.93	15.359	
1,300.0	1,299.6	1,297.3	1,296.4	2.7	2.7	-79.38	-23.0	78.9	78.5	73.2	5.33	14.726	
1,400.0	1,399.4	1,397.2	1,396.1	2.9	2.9	-80.23	-29.1	82.3	81.3	75.6	5.75	14.138	
1,500.0	1,499.1	1,497.2	1,495.8	3.1	3.1	-81.03	-35.2	85.7	84.2	78.0	6.19	13.599	
1,600.0	1,598.9	1,597.1	1,595.5	3.3	3.4	-81.78	-41.2	89.1	87.1	80.4	6.64	13.109	
1,700.0	1,698.6	1,697.1	1,695.2	3.5	3.6	-82.48	-47.3	92.5	89.9	82.8	7.10	12.664	
1,800.0	1,798.4	1,797.0	1,794.9	3.8	3.9	-83.13	-53.4	95.9	92.8	85.3	7.57	12.261	
1,900.0	1,898.1	1,897.0	1,894.6	4.0	4.1	-83.75	-59.5	99.3	95.7	87.7	8.05	11.896	
2,000.0	1,997.9	1,996.9	1,994.3	4.2	4.4	-84.33	-65.6	102.7	98.6	90.1	8.53	11.566	
2,100.0	2,097.6	2,096.9	2,094.0	4.5	4.6	-84.87	-71.6	106.2	101.6	92.5	9.02	11.265	
2,200.0	2,197.4	2,196.8	2,193.8	4.7	4.9	-85.39	-77.7	109.6	104.5	95.0	9.51	10.991	
2,300.0	2,297.2	2,296.8	2,293.5	5.0	5.1	-85.88	-83.8	113.0	107.4	97.4	10.00	10.740	
2,400.0	2,396.9	2,396.7	2,393.2	5.2	5.4	-86.34	-89.9	116.4	110.4	99.9	10.50	10.511	
2,500.0	2,496.7	2,496.7	2,492.9	5.5	5.6	-86.78	-96.0	119.8	113.3	102.3	11.00	10.301	
2,600.0	2,596.4	2,596.6	2,592.6	5.7	5.9	-87.19	-102.0	123.2	116.3	104.8	11.50	10.108	
2,700.0	2,696.2	2,696.6	2,692.3	6.0	6.1	-87.59	-108.1	126.6	119.2	107.2	12.01	9.929	
2,800.0	2,795.9	2,796.6	2,792.0	6.2	6.4	-87.96	-114.2	130.0	122.2	109.7	12.52	9.764	
2,900.0	2,895.7	2,896.5	2,891.7	6.5	6.7	-88.32	-120.3	133.5	125.2	112.2	13.03	9.611	
3,000.0	2,995.5	2,996.5	2,991.4	6.7	6.9	-88.66	-126.4	136.9	128.2	114.6	13.54	9.468	
3,100.0	3,095.2	3,096.4	3,091.1	7.0	7.2	-88.99	-132.4	140.3	131.2	117.1	14.05	9.336	
3,200.0	3,195.0	3,196.4	3,190.9	7.2	7.4	-89.30	-138.5	143.7	134.1	119.6	14.56	9.212	
3,300.0	3,294.7	3,296.3	3,290.6	7.5	7.7	-89.59	-144.6	147.1	137.1	122.1	15.07	9.097	
3,400.0	3,394.5	3,396.3	3,390.3	7.8	8.0	-89.88	-150.7	150.5	140.1	124.5	15.59	8.988	
3,500.0	3,494.2	3,496.2	3,490.0	8.0	8.2	-90.15	-156.8	153.9	143.1	127.0	16.11	8.887	
3,600.0	3,594.0	3,596.2	3,589.7	8.3	8.5	-90.41	-162.8	157.3	146.1	129.5	16.62	8.791	
3,700.0	3,693.7	3,696.1	3,689.4	8.5	8.7	-90.66	-168.9	160.8	149.1	132.0	17.14	8.701	
3,800.0	3,793.5	3,796.1	3,789.1	8.8	9.0	-90.91	-175.0	164.2	152.1	134.5	17.66	8.617	
3,900.0	3,893.3	3,896.0	3,888.8	9.0	9.3	-91.14	-181.1	167.6	155.1	137.0	18.17	8.536	
4,000.0	3,993.0	3,996.0	3,988.5	9.3	9.5	-91.36	-187.2	171.0	158.2	139.5	18.69	8.461	
4,100.0	4,092.8	4,095.9	4,088.2	9.6	9.8	-91.58	-193.2	174.4	161.2	142.0	19.21	8.389	
4,200.0	4,192.5	4,195.9	4,187.9	9.8	10.0	-91.78	-199.3	177.8	164.2	144.5	19.73	8.321	
4,300.0	4,292.3	4,295.8	4,287.7	10.1	10.3	-91.98	-205.4	181.2	167.2	147.0	20.25	8.256	
4,400.0	4,392.0	4,395.8	4,387.4	10.3	10.6	-92.17	-211.5	184.6	170.2	149.5	20.77	8.195	
4,500.0	4,491.8	4,495.7	4,487.1	10.6	10.8	-92.36	-217.6	188.1	173.2	152.0	21.29	8.136	
4,600.0	4,591.6	4,595.7	4,586.8	10.9	11.1	-92.54	-223.6	191.5	176.3	154.5	21.81	8.081	
4,700.0	4,691.3	4,695.7	4,686.5	11.1	11.4	-92.71	-229.7	194.9	179.3	157.0	22.34	8.027	
4,800.0	4,791.1	4,795.6	4,786.2	11.4	11.6	-92.88	-235.8	198.3	182.3	159.5	22.86	7.977	
4,900.0	4,890.8	4,895.6	4,885.9	11.7	11.9	-93.04	-241.9	201.7	185.4	162.0	23.38	7.928	
5,000.0	4,990.6	4,995.5	4,985.6	11.9	12.1	-93.20	-248.0	205.1	188.4	164.5	23.90	7.882	
5,100.0	5,090.3	5,095.5	5,085.3	12.2	12.4	-93.35	-254.0	208.5	191.4	167.0	24.42	7.837	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21C-2806B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-2808B - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,190.1	5,195.4	5,185.0	12.4	12.7	-93.50	-260.1	211.9	194.4	169.5	24.95	7.795	
5,300.0	5,289.9	5,295.4	5,284.7	12.7	12.9	-93.64	-266.2	215.3	197.5	172.0	25.47	7.754	
5,400.0	5,389.6	5,395.3	5,384.5	13.0	13.2	-93.78	-272.3	218.8	200.5	174.5	25.99	7.715	SF
5,500.0	5,488.6	5,485.6	5,474.0	13.3	13.5	-93.83	-281.5	224.0	205.8	179.2	26.58	7.743	
5,600.0	5,583.2	5,572.4	5,557.3	13.8	13.9	-93.84	-302.6	235.8	218.2	190.8	27.42	7.956	
5,700.0	5,670.1	5,658.4	5,634.7	14.4	14.4	-93.68	-335.0	254.0	237.5	209.0	28.55	8.319	
5,800.0	5,746.0	5,743.2	5,704.0	15.3	15.1	-93.22	-377.5	277.8	263.2	233.2	29.98	8.777	
5,900.0	5,808.1	5,827.1	5,764.0	16.3	15.9	-92.38	-428.5	306.4	294.3	262.6	31.73	9.275	
6,000.0	5,854.2	5,910.3	5,813.4	17.5	16.8	-91.14	-486.9	339.2	330.0	296.2	33.79	9.767	
6,100.0	5,882.5	5,993.7	5,851.6	18.9	17.9	-89.58	-551.4	375.4	369.2	333.0	36.17	10.206	
6,200.0	5,892.0	6,078.2	5,877.8	20.4	19.2	-87.81	-621.4	414.7	410.6	371.8	38.81	10.580	
6,300.0	5,892.0	6,165.1	5,890.8	21.8	20.5	-89.83	-696.2	456.7	455.7	414.4	41.25	11.047	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #21C-2806B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Reference Site:	S21-T10N-R58W	**MD Reference:**	WELL @ 4860.5ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	Grid
Reference Well:	Razor #21C-2806B	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4860.5ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.00 W °
Coordinates are relative to: Razor #21C-2806B
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.05°